



# ROCKY



Roesner Pty uses Rocky DEM to increase efficiency of fertilizer spreaders



// Rocky DEM simulation speeds up prototype development up to four times when compared to physical tests.

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Today, plantation and agricultural operations are performed quite differently than they were decades ago. Innovative technological advances have been applied to improve agricultural productivity, such as the use of sophisticated tools that revolutionize daily agricultural processes. One of the most conventional applications is fertilizer placement. The best agricultural spreaders operate with minimum fertilizer waste.

A key fertilizer spreader concern is lack of uniformity of distribution patterns which leads to uneven crop growth. Considering market needs, Roesner Pty Ltd have optimized

their Marshall Multispread product to minimize damaging environmental run-off, ensure long term soil productivity and reduce fuel and labour costs. To guarantee that the new machinery performed according to specifications, the company relied on engineering simulation, since performing physical tests is time-consuming and expensive compared to the computational approach. Roesner Pty's R&D team chose Rocky DEM software to simulate loading chutes, spinner discs and vane designs. As a result, engineers obtained results quickly and accurately.



Figure 1: Fertilize Spreader

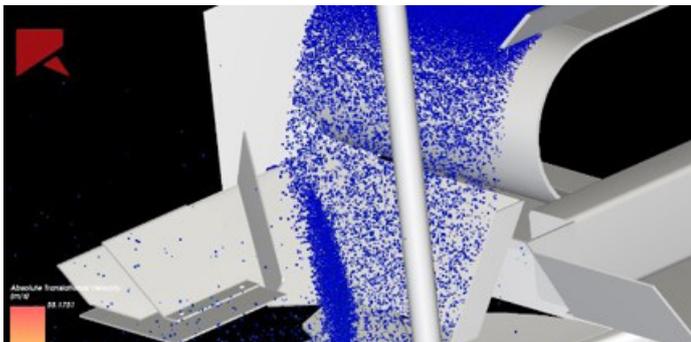


Figure 2: Simulation showing the interactions between the small fertilizer particles and the rotating spinner disc

## CHALLENGE

Reduce the uneven distribution of fertilizer, yield loss and environmental run-off

## SOLUTION

By using Rocky DEM, engineers quickly understood complex variables, such as fertilizer particle size. They performed virtual prototyping of loading chutes, spinner discs and vane designs without the need for costly physical testing

## BENEFITS

Complex interactions between the small fertilizer particles and the rotating spinner disc, are accurately modelled. By changing the disc angle a 5% increase the optimum spread pattern in the field was achieved



## ABOUT ROESNER PTY LTD

Roesner Pty Ltd was established at Harvey Western Australia in 1900. Today, still a family run company, Roesners use modern engineering and manufacturing tools to produce the Marshall Multispread range of all purpose fertilizer spreaders. Roesner Pty Ltd is supported by Rocky DEM Channel Partner, LEAP Australia.